

General

Guideline Title

Presumptive antibiotic use in tube thoracostomy for traumatic hemopneumothorax: an Eastern Association for the Surgery of Trauma practice management guideline.

Bibliographic Source(s)

Moore FO, Duane TM, Hu CK, Fox AD, McQuay N Jr, Lieber ML, Como JJ, Haut ER, Kerwin AJ, Guillaumondegui OD, Burns JB, Eastern Association for the Surgery of Trauma. Presumptive antibiotic use in tube thoracostomy for traumatic hemopneumothorax: an Eastern Association for the Surgery of Trauma practice management guideline. J Trauma Acute Care Surg. 2012 Nov;73(5 Suppl 4):S341-4. [20 references] [PubMed](#)

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version:

Luchette FA, Barrie PS, Oswanski MF, Spain DA, Mullins CD, Palumbo F, Pasquale MD. Practice management guidelines for prophylactic antibiotic use in tube thoracostomy for traumatic hemopneumothorax. J Trauma 2000 Apr;48(4):753-7. [26 references]

Practice management guidelines for prophylactic antibiotic use in tube thoracostomy for traumatic hemopneumothorax. Allentown (PA): Eastern Association for the Surgery of Trauma (EAST); 2000. 16 p. [26 references]

Recommendations

Major Recommendations

Do presumptive antibiotics reduce the incidence of empyema or pneumonia in tube thoracostomy (TT) for traumatic hemopneumothorax?

1. There is insufficient published evidence to support any recommendation either for or against the use of presumptive antibiotics to reduce the incidence of empyema or pneumonia in TT for traumatic hemopneumothorax.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Traumatic hemopneumothorax

Guideline Category

Management

Prevention

Clinical Specialty

Critical Care

Emergency Medicine

Pulmonary Medicine

Surgery

Thoracic Surgery

Intended Users

Advanced Practice Nurses

Allied Health Personnel

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

- To develop updated recommendations from the 1998 original guideline document on the use of presumptive antibiotics in tube thoracostomy (TT) for patients who sustained a traumatic hemopneumothorax
- To address the clinical questions:
 - Do presumptive antibiotics reduce the incidence of empyema or pneumonia?
 - If presumptive antibiotics reduce the incidence of empyema or pneumonia, what is the optimal duration of antibiotic prophylaxis?

Target Population

Individuals with traumatic hemopneumothorax undergoing chest tube insertion (tube thoracostomy [TT])

Interventions and Practices Considered

Tube thoracostomy with and without presumptive antibiotics

Major Outcomes Considered

Incidence of:

- Pneumonia
- Empyema

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

A computerized search of the National Library of Medicine MEDLINE database was undertaken using the [PubMed Entrez](#) interface. English language citations for the period of 1997 through 2011 were included, focusing on presumptive or prophylactic antibiotic use in tube thoracostomy (TT) for traumatic hemopneumothorax. Review articles, letters to the editor, and case reports were excluded from the search. The dates selected allowed for minimal overlap since the last published guidelines. In addition, the bibliographies of each article were reviewed for references not originally identified by the MEDLINE search.

Number of Source Documents

Of the 98 articles identified by both methods, seven were prospective or retrospective and selected as meeting criteria for review.

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Class I: Prospective randomized controlled trials.

Class II: Clinical studies in which data were collected prospectively or retrospective analyses based on clearly reliable data, such as cohort, observational, prevalence, or case-control studies.

Class III: Studies based on retrospectively collected data, including database or registry review, case series, or expert opinion.

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Articles were classified according to the Eastern Association for the Surgery of Trauma (EAST) primer "Utilizing Evidence-Based Outcome Measures to Develop Practice Management Guidelines" (see the "Availability of Companion Documents" field).

Articles were classified as Class I, II, or III according to the definitions described in the "Rating Scheme for the Strength of the Evidence" field.

Methods Used to Formulate the Recommendations

Description of Methods Used to Formulate the Recommendations

The Practice Management Guidelines Committee Work Group for Presumptive Antibiotics in Tube Thoracostomy (TT) for Traumatic Hemopneumothorax consisted of 10 acute care surgeons and one statistician/epidemiologist who reviewed the articles and collaborated to produce the practice management guideline document.

Recommendations were generated according to the Eastern Association for the Surgery of Trauma (EAST) primer "Utilizing Evidence-Based Outcome Measures to Develop Practice Management Guidelines" (see the "Availability of Companion Documents" field).

Recommendations were then classified as Level 1, 2, or 3 according to the definitions described in the "Rating Scheme for the Strength of the Recommendations" field.

Rating Scheme for the Strength of the Recommendations

Level I: The recommendation is convincingly justifiable based on the available scientific information alone. It is usually based on Class I data, however, strong Class II evidence may form the basis for a Level 1 recommendation, especially if the issue does not lend itself to testing in a randomized format. Conversely, low quality or contradictory Class I data may not be able to support a Level 1 recommendation.

Level II: The recommendation is reasonably justifiable by available scientific evidence and strongly supported by expert opinion. It is usually supported by Class II data or a preponderance of Class III evidence.

Level III: The recommendation is supported by available data but adequate scientific evidence is lacking. This recommendation is generally supported by Class III data. This type of recommendation is useful for educational purposes and in guiding future clinical research.

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Not stated

Description of Method of Guideline Validation

Not applicable

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

Current evidence (Class I-III) was considered insufficient to make a recommendation.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate management and treatment of individuals with traumatic hemopneumothorax undergoing chest tube insertion (tube thoracostomy [TT])

resulting in:

- Reduction in the occurrence of infectious complications such as empyema and pneumonia in patients who undergo TT for traumatic hemopneumothorax
- Decreased length of hospital stay, cost and morbidity to the patient

Potential Harms

Inappropriate use of antibiotics and the increased incidence of multidrug-resistant organisms

Qualifying Statements

Qualifying Statements

- The Eastern Association for the Surgery of Trauma (EAST) is a multi-disciplinary professional society committed to improving the care of injured patients. The Ad hoc Committee for Practice Management Guideline Development of EAST develops and disseminates evidence-based information to increase the scientific knowledge needed to enhance patient and clinical decision-making, improve health care quality, and promote efficiency in the organization of public and private systems of health care delivery. Unless specifically stated otherwise, the opinions expressed and statements made in this publication reflect the authors' personal observations and do not imply endorsement by nor official policy of the Eastern Association for the Surgery of Trauma.
- "Clinical practice guidelines are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances."⁶ These guidelines are not fixed protocols that must be followed, but are intended for health care professionals and providers to consider. While they identify and describe generally recommended courses of intervention, they are not presented as a substitute for the advice of a physician or other knowledgeable health care professional or provider. Individual patients may require different treatments from those specified in a given guideline. Guidelines are not entirely inclusive or exclusive of all methods of reasonable care that can obtain/produce the same results. While guidelines can be written that take into account variations in clinical settings, resources, or common patient characteristics, they cannot address the unique needs of each patient nor the combination of resources available to a particular community or health care professional or provider. Deviations from clinical practice guidelines may be justified by individual circumstances. Thus, guidelines must be applied based on individual patient needs using professional judgment.

⁶Institute of Medicine. Clinical practice guidelines: directions for a new program. MJ Field and KN Lohr (eds) Washington, DC: National Academy Press. 1990: pg 39.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Staying Healthy

IOM Domain

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2000 (revised 2012 Nov)

Guideline Developer(s)

Eastern Association for the Surgery of Trauma - Professional Association

Source(s) of Funding

Eastern Association for the Surgery of Trauma (EAST)

Guideline Committee

Eastern Association for the Surgery of Trauma (EAST) Practice Management Guidelines Committee

Composition of Group That Authored the Guideline

Committee Members: Forrest O. Moore, MD; Therese M. Duane, MD; Charles K.C. Hu, MD; Adam D. Fox, DO; Nathaniel McQuay, Jr., MD; Michael L. Lieber, MS; John J. Como, MD; Elliott R. Haut, MD; Andrew J. Kerwin, MD; Oscar D. Guillaumondegui, MD; J. Bracken Burns, DO

Financial Disclosures/Conflicts of Interest

Elliot R. Haut (E.R.H.) is the Principal Investigator (PI) of a Mentored Clinical Scientist Development Award K08 1K08HS017952-01 from the Agency for Healthcare Research and Quality (AHRQ) entitled "Does Screening Variability Make DVT an Unreliable Quality Measure of Trauma Care?" E.R.H. receives royalties from Lippincott, Williams, Wilkins for a book - "Avoiding Common ICU Errors." E.R.H. has given expert witness testimony in various medical malpractice cases. The authors declare no conflicts of interest.

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Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) format from the [Eastern Association for the Surgery of Trauma \(EAST\) Web site](#) .

Print copies: Available from the EAST Guidelines, c/o Forrest O. Moore, MD, Division of Trauma & Surgical Critical Care, Louisiana State University Health Sciences Center, 1501 Kings Highway, Shreveport, LA 71130; email: moore677@aol.com.

Availability of Companion Documents

The following is available:

- Utilizing evidence based outcome measures to develop practice management guidelines: a primer. Allentown (PA): Eastern Association for the Surgery of Trauma; 2000. 18 p. Available in Portable Document Format (PDF) from the [Eastern Association for the Surgery of Trauma \(EAST\) Web site](#) .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI on March 9, 2001. The information was verified by the guideline developer on May 4, 2001. This NGC summary was updated by ECRI on April 12, 2013. The updated information was verified by the guideline developer on May 10, 2013.

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